

WHAT IS CLAIMED IS:

1. A reflecting mirror comprising:
  - a substrate through which light passes;
  - an electrode film which is electrically conductive, which is substantially transparent, and which is formed at a rear surface side of the substrate;
  - a reduction coloring film formed at a surface of the electrode film at a side opposite a side where the substrate is disposed, the reduction coloring film coloring due to a reversible chemical reaction with hydrogen ions; and
  - an electrically conductive reflecting film which is formed at a surface of the reduction coloring film at a side opposite a side where the electrode film is disposed, and which reflects light at least at a substrate side surface, and which contains a hydrogen storing metal which stores hydrogen in an adsorbed state, and which, due to application of voltage, releases hydrogen and moves the hydrogen as hydrogen ions toward the reduction coloring film, and which, due to one of canceling of the application of said voltage and applying of a voltage which is reverse of said voltage, attracts the hydrogen ions that have moved toward the reduction coloring film and adsorbs and stores the hydrogen ions as hydrogen.
2. The reflecting mirror of claim 1, wherein an ion conducting film, which contains a dielectric and through which hydrogen ions can pass, is provided between the electrically conductive reflecting film and the reduction coloring film.

3. The reflecting mirror of claim 1, wherein the hydrogen storing metal comprises at least one selected from the group consisting of palladium (Pd), rhodium (Rh), platinum (Pt), and alloys having functions equivalent to those of these hydrogen storing metals.

4. The reflecting mirror of claim 1, wherein the electrode film comprises ITO (Indium Tin Oxide).

5. The reflecting mirror of claim 1, wherein the reduction coloring film comprises an oxide of tungsten.

6. The reflecting mirror of claim 1, wherein the reduction coloring film is colored to a bluish color due to a reversible chemical reaction with the hydrogen ions.

7. The reflecting mirror of claim 2, wherein the dielectric comprises at least one selected from the group consisting of tantalum oxide ( $\text{Ta}_2\text{O}_5$ ), silicon oxide ( $\text{SiO}_2$ ), and magnesium fluoride ( $\text{MgF}_2$ ).

8. The reflecting mirror of claim 1, further comprising a control means, wherein the electrically conductive reflecting film and the electrode film are connected to a power source via the control means.

9. The reflecting mirror of claim 1, further comprising a light sensor.

- 10. A rearview mirror for a vehicle comprising the reflecting mirror of  
- claim 1.  
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